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(54) Title: **TRANSPARENT CHECKPOINTING AND PROCESS MIGRATION IN A DISTRIBUTED SYSTEM**

(57) Abstract: A distributed system for creating a checkpoint for a plurality of processes running on the distributed system. The distributed system includes a plurality of compute nodes with an operating system executing on each compute node. A checkpoint library resides at the user level on each of the compute nodes, and the checkpoint library is transparent to the operating system residing on the same compute node and to the other compute nodes. Each checkpoint library uses a windowed messaging logging protocol for checkpointing of the distributed system. Processes participating in a distributed computation on the distributed system may be migrated from one compute node to another compute node in the distributed system by re-mapping of hardware addresses using the checkpoint library.



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